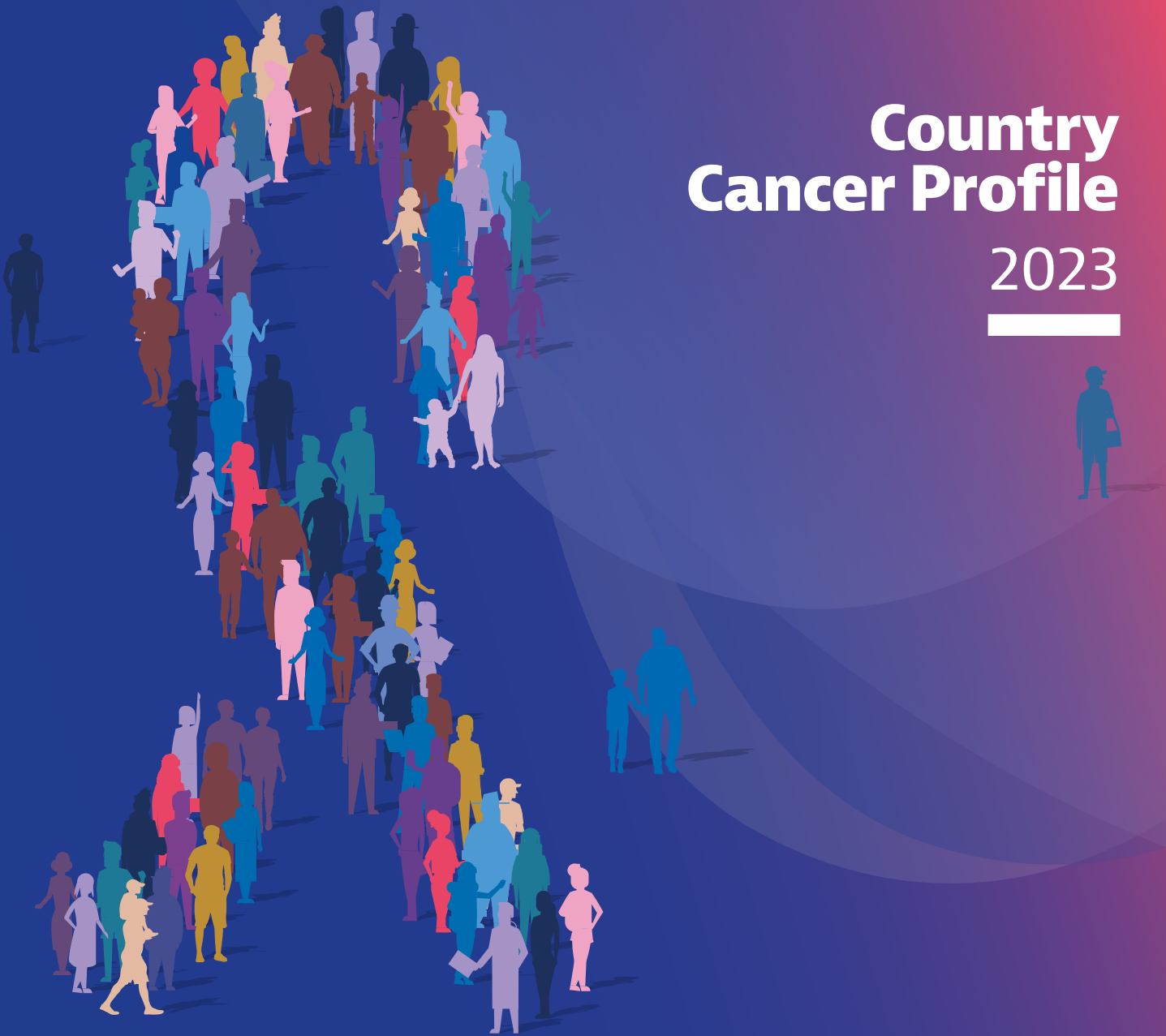


ICELAND

Country Cancer Profile

2023



The Country Cancer Profile Series

The European Cancer Inequalities Registry is a flagship initiative of the Europe's Beating Cancer Plan. It provides sound and reliable data on cancer prevention and care to identify trends, disparities and inequalities between Member States and regions. The Country Cancer Profiles identify strengths, challenges and specific areas of action for each of the 27 EU Member States, Iceland and Norway, to guide investment and interventions at the EU, national and regional levels under the Europe's Beating Cancer Plan. The European Cancer Inequalities Registry also supports Flagship 1 of the Zero Pollution Action Plan.

The Profiles are the work of the OECD in co-operation with the European Commission. The team is grateful for the valuable inputs received from national experts and comments provided by the OECD Health Committee and the EU Expert Thematic Group on Cancer Inequality Registry.

Data and information sources

The data and information in the Country Cancer Profiles are based mainly on national official statistics provided to Eurostat and the OECD, which were validated to ensure the highest standards of data comparability. The sources and methods underlying these data are available in the Eurostat Database and the OECD Health Database.

Additional data also come from the World Health Organization (WHO), the International Agency for Research on Cancer (IARC), the International Atomic Energy Agency (IAEA), the Institute for Health Metrics and Evaluation (IHME) and other national sources (independent of private or commercial interests). The calculated EU averages are weighted averages of the 27 Member States unless otherwise noted. These EU averages do not include Iceland and Norway.

Purchasing Power Parity (PPP) is defined as the rate of currency conversion that equalises the purchasing power of different currencies by eliminating the differences in price levels between countries.

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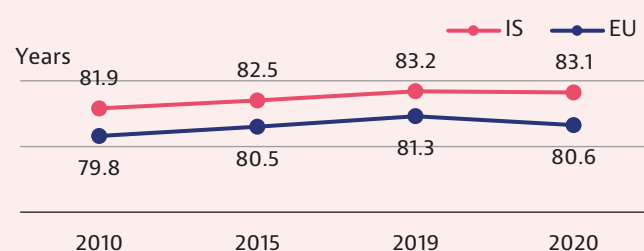
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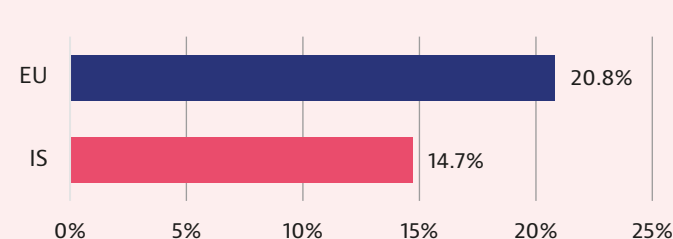
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Summary of the main characteristics of the health system

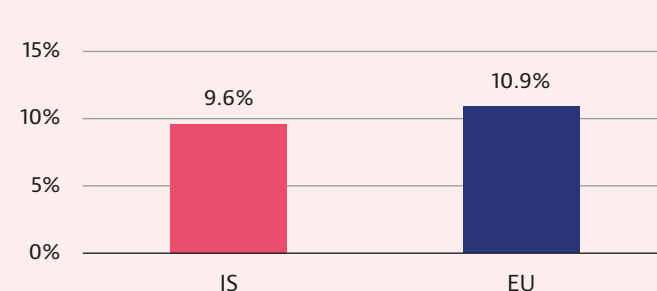
LIFE EXPECTANCY AT BIRTH (YEARS)



SHARE OF POPULATION AGED 65 AND OVER (2021)

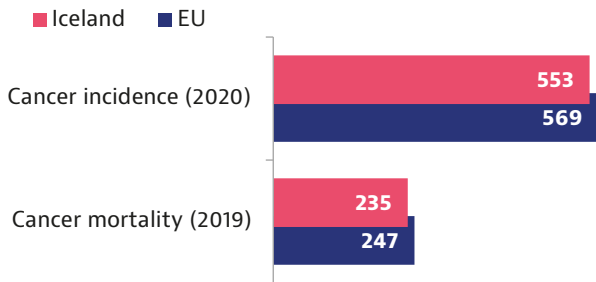


HEALTH EXPENDITURE AS A % OF GDP (2020)

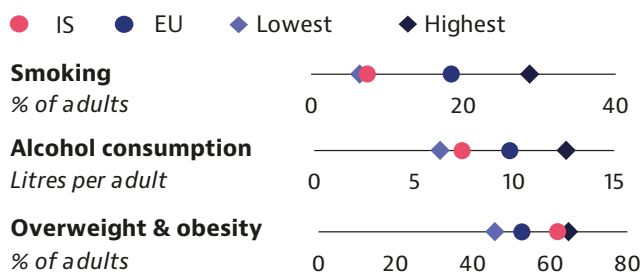


Source: Eurostat Database.

1. Highlights



Age-standardised rate per 100 000 population



Cancer in Iceland

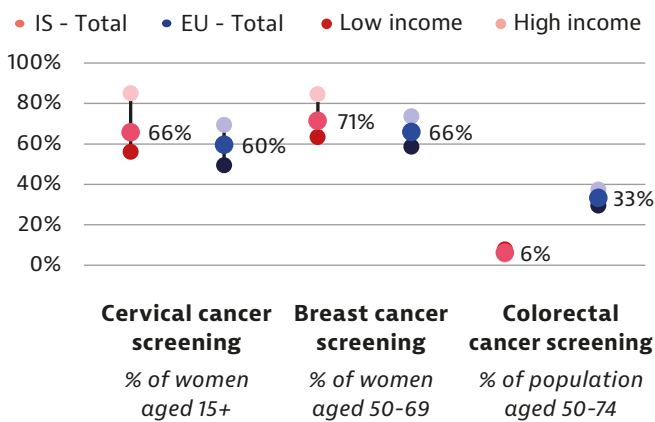
Estimated cancer incidence and mortality rates in Iceland are lower than the EU averages. Most cancer deaths are due to lung, colorectal, prostate and breast cancers. To reduce the burden of cancer, Iceland drafted its first National Cancer Plan in 2017, but it was not fully implemented as planned in 2020 because of the COVID-19 pandemic.

Risk factors and prevention policies

Health promotion is a priority in Iceland's health system. Smoking rates are well below the EU average, and alcohol consumption is low. However, overweight and obesity rates are comparable to the worst performing EU countries, and particularly high among elderly people, those with lower education levels and men, suggesting a need for targeted approaches.

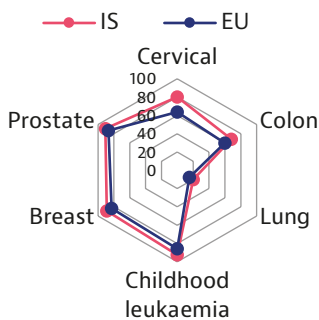
Early detection

Iceland has a long history of cervical and breast cancer screening programmes, and uptake is high, although it has stagnated in recent decades. Colorectal cancer screening is not population-based, and uptake is lower than the EU average. However, organised colorectal cancer screening is now being prepared.

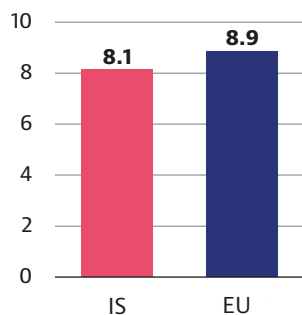


Cancer care performance

Financial barriers to accessing cancer care may exist among those on lower incomes. Resources for cancer care seem sufficient, although challenges in workforce numbers persist because of the small country size. Access to cancer care is generally good, based on decentralised delivery of chemotherapy, follow-up and palliative care, but some cancer patients wait a long time to receive care. Cancer survival rates are high, reflecting that high-quality cancer care, meeting international standards, is provided by skilled professionals.



Five-year net survival rate by cancer site, 2010-14



Number of radiation therapy centres per 100 000 population, 2007-22

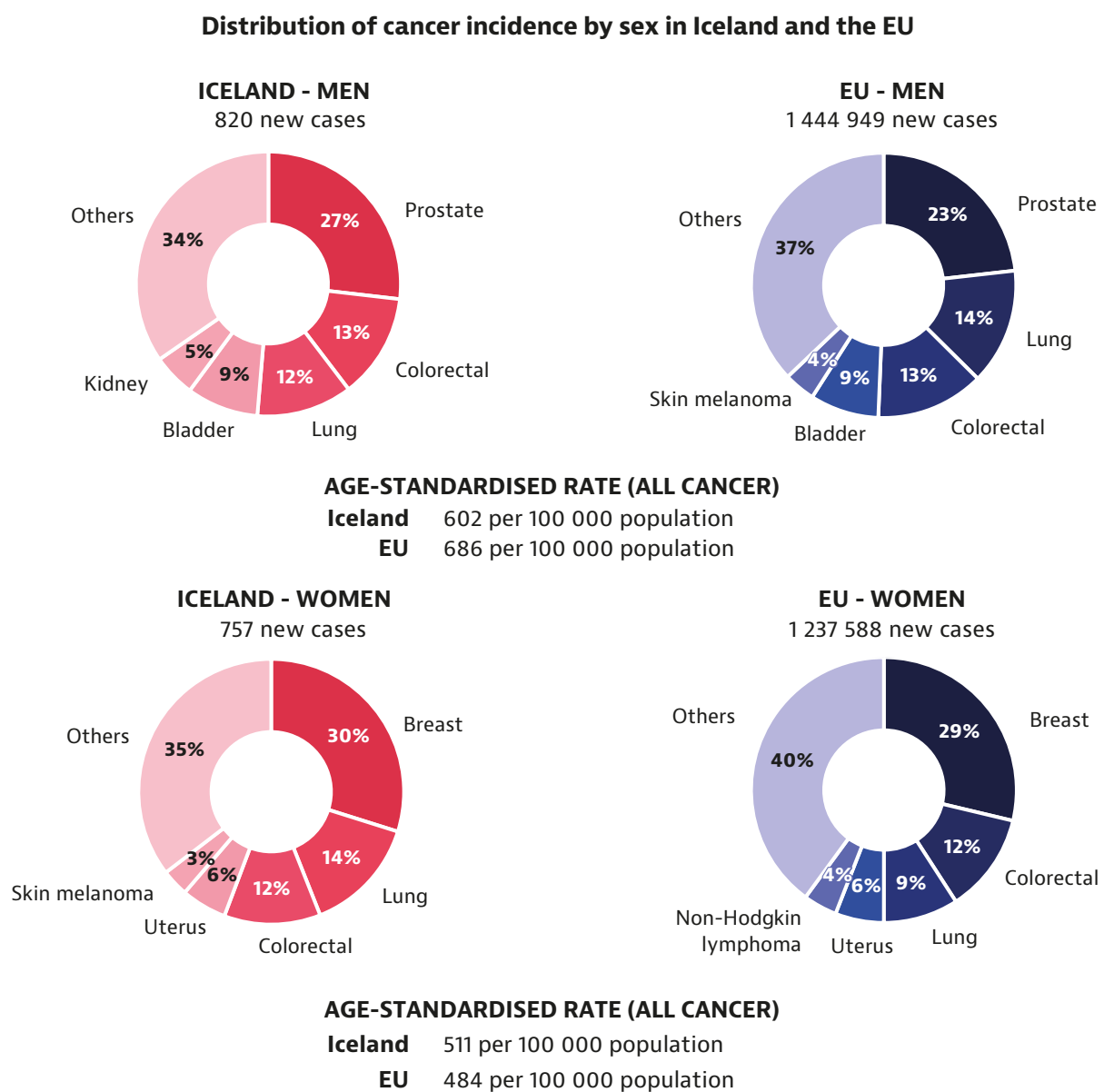
2. Cancer in Iceland

Cancer incidence is slightly lower than the EU average

According to European Cancer Information System (ECIS) of the Joint Research Centre based on incidence trends from pre-pandemic years, almost 1 600 people were expected to be newly diagnosed with cancer in Iceland in 2020 (Figure 1). The age-standardised rate was expected to be 553

new cancer cases per 100 000 population, which is 3 % lower than the EU average. Almost half of estimated new cases were expected to be prostate, breast, lung and colorectal cancers. The incidence rate among people aged 65 years and over was expected to be 7 % higher in Iceland than the EU average, but rates for other age groups were lower.

Figure 1. Cancer incidence among men is significantly lower in Iceland than the EU average in 2020



Note: Corpus uteri does not include cancer of the cervix. These estimates were created before the COVID-19 pandemic, based on incidence trends from previous years, and may differ from observed rates in more recent years. Source: European Cancer Information System (ECIS). From <https://ecis.jrc.ec.europa.eu>, accessed on 09/05/2022. © European Union, 2022.

The gender difference in cancer incidence rates is small

While on average across EU countries the cancer incidence rate was expected to be 42 % higher among men than women, the gender difference in Iceland was expected to be 18 % – on par with the lowest in the EU (Figure 1). This is because of relatively low incidence among men (602 per 100 000 population vs. 686 across the EU) but relatively high incidence among women (511 per 100 000 population vs. 484 across the EU). The gender difference in incidence rates was expected to be 27 % for colorectal cancer (78 per 100 000 men vs. 61 per 100 000 women) in Iceland – much lower than the EU average of 63 % (92 per 100 000 men and 56 per 100 000 women). In part reflecting high smoking rates among men and women in the past, the incidence rate for lung cancer was expected to be high among women in Iceland (74 per 100 000 women vs. 72 per 100 000 men), and significantly higher than the EU average (44 per 100 000 women vs. 97 per 100 000 men).

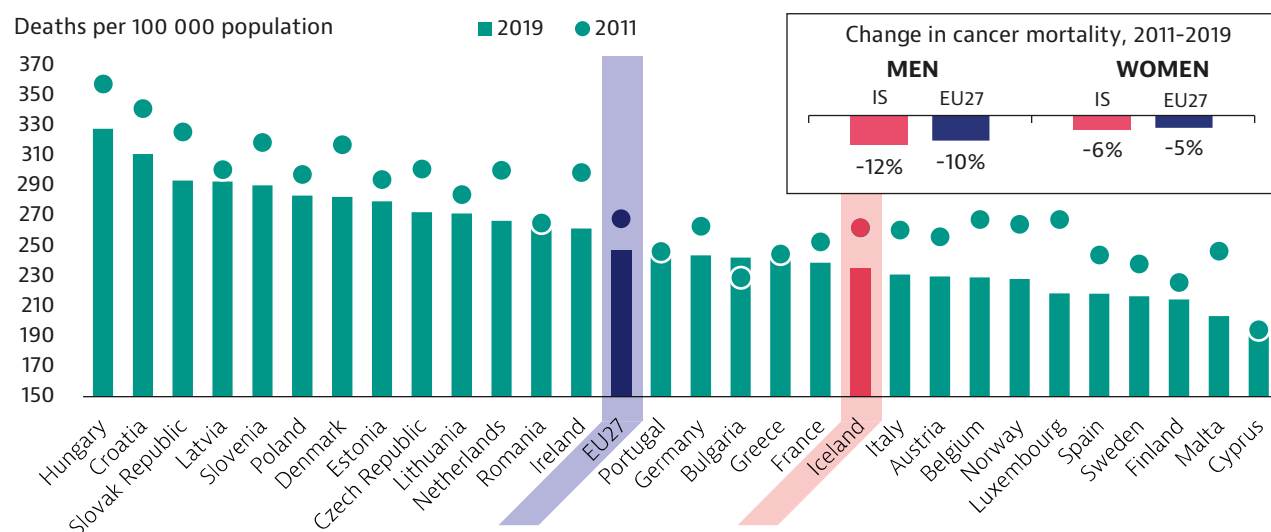
In 2020, skin melanoma was expected to constitute 3 % of new cancer cases in both men and women and gastric (stomach) cancer was expected to constitute 2 % of new cancer cases in both men and women.

For all cancer types, incidence rates in Iceland were generally below the EU averages. For paediatric cancer, the age-standardised incidence rate in children under 15 years in 2020 was 8 per 100 000, which is lower than the EU average (15 per 100 000 population). However, incidence rates were significantly higher than the EU average for lung cancer among women (almost 70 % higher) and for kidney cancer among both men and women (almost 20 % higher among men and over 30 % higher among women). In 2013, the estimated number of new rare cancer cases in Iceland was 327.

Cancer mortality rate in Iceland is lower than the EU average

In 2019, the cancer mortality rate was 235 deaths per 100 000 population, which is 5 % lower than the EU average of 247 per 100 000 (Figure 2). The rate for men (278 deaths per 100 000) was 15 % lower than the EU average, and the rate for women (207 deaths per 100 000) was 9 % higher than the EU average, resulting in a very small gender gap in Iceland – the second smallest in the EU. Between 2011 and 2019, cancer mortality rates decreased faster in Iceland than in most EU countries, with a 12 % reduction among men (compared to the EU average decline of 10 %), and a 6 % reduction among women (compared to the EU average decline of 5 %).

Figure 2. Cancer mortality rate in Iceland decreased faster than the EU average



Note: The EU average is weighted (calculated by Eurostat for 2011-2017 and by the OECD for 2018-2019). Source: Eurostat Database.

Mortality rates in Iceland were lower than the EU averages for most types of cancer. In 2019, the mortality rates for lung and colorectal cancers – the two leading causes of cancer death – were 8 % lower than the EU averages. However, the mortality rates for the third and fourth highest causes of

cancer death were 80 % higher for prostate and 14 % higher for breast cancer than the EU averages. On the other hand, skin melanoma accounted for 3 deaths per 100 000 population, equivalent to the EU average.

Overall cancer mortality rates decreased faster than the EU average but mortality rates increased for breast, colorectal and prostate cancers

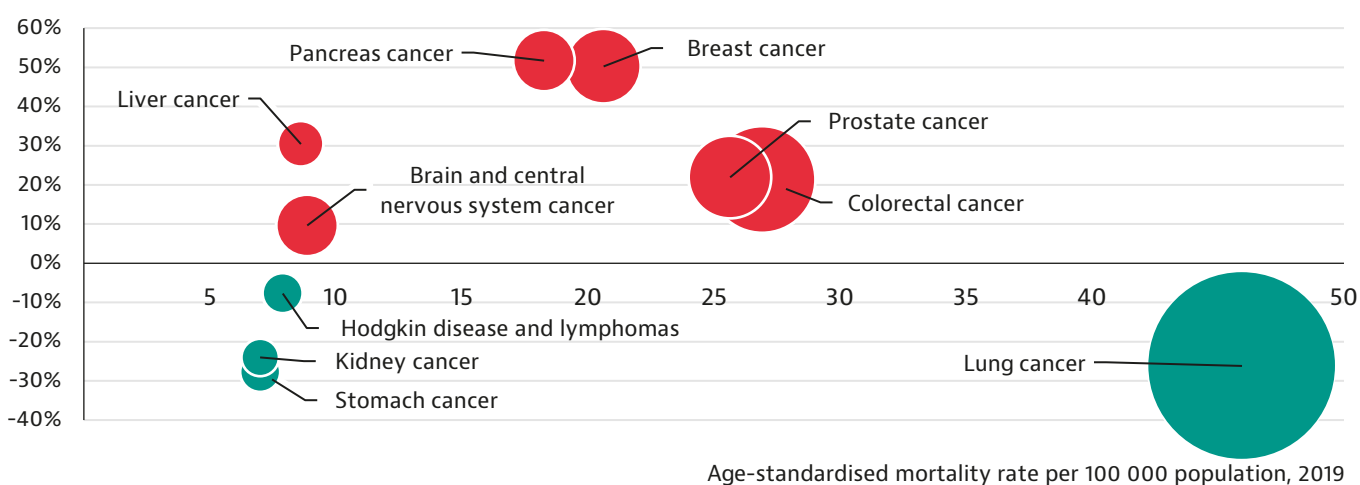
Between 2011 and 2019, cancer mortality rates in Iceland decreased by 10 % – a larger decline than the EU average of 8 %. This was mainly attributable to a large decrease in lung and gastric (stomach) cancer mortality rates by almost 30 % in Iceland (Figure 3). Among men, the mortality rate for lung cancer declined by 40 % – the largest reduction in the EU – reaching a lower rate than that among women in 2019 (41 per 100 000 men vs. 50 per 100 000 women). In 2019, the mortality rate for

lung cancer was 46 deaths per 100 000 population for both men and women, which is lower than the EU average (50 per 100 000 population), and gastric (stomach) cancer accounted 7 deaths per 100 000 population, which is also lower than the EU average (10 per 100 000 population).

However, mortality rates increased for most other common cancers. The mortality rate increased by 50 % for breast cancer and by 21 % for colorectal cancer, suggesting room for improvement in cancer screening uptake for these cancers (see Section 4). Mortality rate increases were also large for pancreas, liver and prostate cancers.

Figure 3. Mortality rate for lung cancer declined but the rate for other major cancers increased

Change in cancer mortality, 2011-2019 (or nearest year)



Note: Red bubbles signal an increase in the percentage change in cancer mortality during 2011-2019; green bubbles signal a decrease. The size of the bubbles is proportional to the mortality rates in 2019. The mortality of some of these cancer types is low; hence, the percentage change should be interpreted with caution. Bubble sizes for mortality rates are not comparable between countries. Source: Eurostat Database.

During 2000 and 2019, potential years of life lost due to malignant neoplasms saw a relative decrease of 33 %, and accounted for 969 years of life lost among 100 000 people aged up to 75 years in 2019. The relative decrease was somewhat larger among men (35 %) than women (32 %), accounting for 898 and 1 044 years of life lost in 2019, respectively. These trends need to be interpreted with care since the numbers of cases are very low, so one death can lead to a significant change in mortality and potential years of life lost for Iceland because of its small population size.

Iceland drafted its first National Cancer Plan in 2017, but it has not been fully implemented yet

Based on input from providers including various health professionals and hospitals, and the Icelandic Cancer Society – a nationwide non-profit organisation based on fighting cancer and an

umbrella organisation of 34 member associations, Iceland developed its first National Cancer Plan in 2017. The Plan focuses on nine policy areas: a) prevention, screening and early diagnosis; b) education and human resources development; c) evidence-based cancer care; d) active involvement of cancer patients and their families; e) timely provision of continuous, integrated care; f) well-being of cancer patients; g) geriatric oncology; h) a cancer registry for monitoring and performance improvement; and i) science and research. These priorities align with the Europe’s Beating Cancer Plan (European Commission, 2021). The Ministry of Health approved the implementation of the National Cancer Plan in 2019, and a working group was formed for its implementation. However, the Plan was not fully implemented as planned in 2020 because of the COVID-19 pandemic.

3. Risk factors and prevention policies

Health promotion is a key priority in Iceland, but health spending on preventive care is low

In Iceland, 2.6 % of health expenditure was spent on preventive care in 2020 – lower than the EU average of 3.4 %. In 2021, Iceland introduced its Public Health Policy, with the aim of becoming one of the healthiest nations in the world by 2030, and the Directorate of Health started the Health Promoting Community Programme in 2013, in collaboration with local authorities and other stakeholders. A Public Health Action Plan aiming to reduce the prevalence of unhealthy lifestyles is under development, and financial resources will be allocated accordingly.

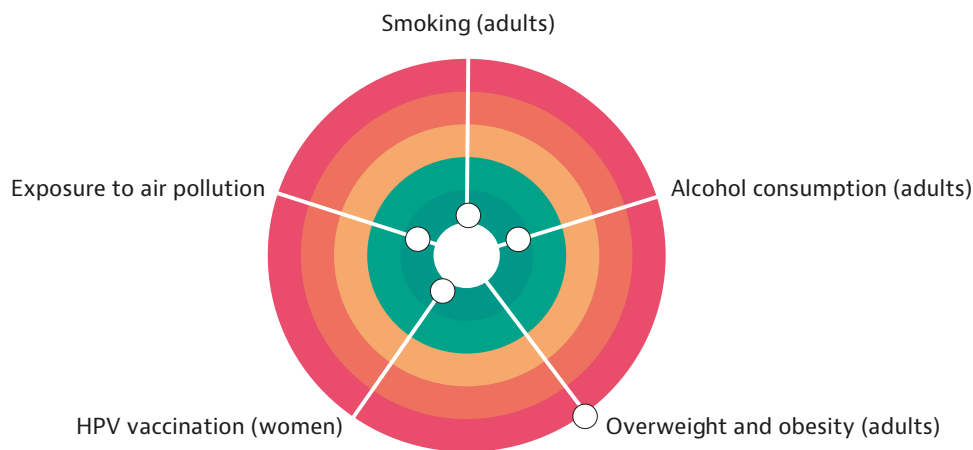
The overweight rate is higher than in the EU, despite efforts to tackle obesity

In Iceland, three out of five adults were overweight or obese in 2019, and the overweight rate was comparable to the worst performing EU countries (62 % vs. 53 % across the EU) (Figure 4). Overweight

and obesity were more prevalent among men (71 % than women (54 %), among people aged 65 years and over (66 %) than those aged 15-64 years (61 %) and among people with lower (66 %) than higher (57 %) education levels. The rates were also higher than the EU averages of 60 % among men, 63 % among people aged 65 years and over and 59 % among people with lower education level. These suggest that risks of developing cancers are high among certain population groups such as men, elderly people and people with lower education level.

In 2017-2018, the prevalence of overweight and obesity among 15-year-olds was 21 %, which is also higher than the EU average of 18 %. Between 2014 and 2019, the overweight rate among adults increased by 12 % – a larger rise than the EU average of 6 %. The increase was particularly high among those with lower education levels (31 % vs. the EU average of 11 %).

Figure 4. Overweight is a major public health concern in Iceland



Note: The closer the dot is to the centre, the better the country performs compared to other EU countries. No country is in the white “target area” as there is room for progress in all areas.

Sources: OECD calculations based on the European Health Interview Survey (EHIS) 2019 for smoking and overweight/obesity rates, OECD Health Statistics 2022 and WHO Global Information System on Alcohol and Health (GISAH) for alcohol consumption (2020), WHO for human papillomavirus (HPV) vaccination (through the WHO/UNICEF Joint Reporting Form on Immunization) (2020) and Eurostat for air pollution (2019).

To reverse the increasing trend of overweight and obesity, Iceland has introduced measures to promote healthier eating. They include both targeted and community-based measures, such as nutritional standards for schools’ canteen, banning food and beverage advertising on TV and radio during hours when children are the main audience,

and using the Nordic keyhole nutrition label – also used in Denmark, Norway and Sweden – which highlights healthier alternatives within a product group. Furthermore, in 2020, Iceland published its first set of clinical guidelines on care for adults living with obesity (OECD/European Observatory on Health Systems and Policies, 2021).

Healthy eating could be promoted more among elderly people, men and those with lower education levels

Related to the obesity trends, daily vegetable consumption in 2019 was less common among people aged 65 years and over (42 %) than people aged 15-64 years (54 %), among men (43 %) than women (58 %) and among those with lower (45 %) than higher (58 %) education levels in Iceland. Rates were also lower than the EU averages (55 % among people aged 65 years and over, 44 % among men and 49 % among those with lower education level). Daily fruit consumption was less common among all population subgroups in Iceland than the EU averages.

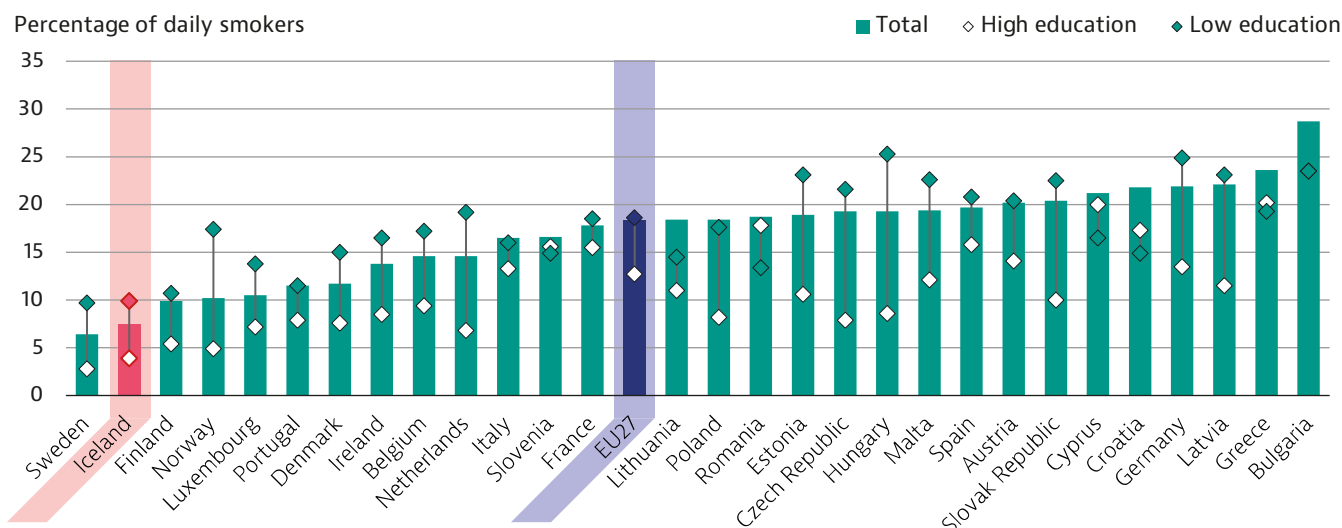
On the other hand, physical activity is very common in Iceland across population subgroups, although the rate is decreasing. In 2019, 55.9 % of people engaged in at least moderate physical activity each week, which is higher than the EU average of 32.7 %. Iceland is among the few countries where physical activity is more common among women (57 %) than among men (55 %), and over half the population met the WHO recommendation of minimum physical activity per week – almost double the EU average of 29 %. Nonetheless, physical inactivity in Iceland is more common among elderly people and those

with lower education levels, who also have high prevalence of unhealthy eating habits. This suggests that targeted approaches may be needed to promote healthier eating habits and physical activities among these subgroups.

Cigarette smoking rates are on par with the lowest in the EU, but e-cigarette use has become popular

In the 1980s, the proportion of people aged 15 years and over reporting daily smoking in Iceland was high – over 30 % for both men and women. Following a significant decline over three decades, the smoking rate reached 7.5 % in 2019, which is comparable to the best performing EU countries. However, the disparity by education attainment was large, and smoking prevalence was more than twice as high among people with lower (10 %) than higher (4 %) education levels (Figure 5). Contrary to the decreasing trend in the EU, the proportion of the population aged 15 years and over who are regular users of vaping products has increased in the past five years. In 2020, 4.0 % of the Icelandic population were regular vaping product users, which is higher than the EU average of 2.6 %, and prevalence was equally high among men (3.9 %) and women (4.1 %) in Iceland, while the EU average was 3.2 % for men and 1.7 % for women.

Figure 5. Smoking rates are generally very low



Note: The EU average is weighted (calculated by Eurostat).
Source: Eurostat Database (EHIS). Data refer to 2019.

Alcohol consumption is low, and hazardous drinking is less common than the EU average

The average Icelandic person aged 15 years and over consumed 7.4 litres of pure alcohol in 2020 – about 24 % less than the EU average (9.8 litres). Hazardous alcohol drinking is also less common

across all population subgroups in Iceland than the EU averages. Within Iceland, however, hazardous alcohol drinking was high among those with low education levels (1.4 %) and low incomes (1.1 %) in 2014 (although below the EU averages).

The low rates of tobacco and alcohol consumption are partly attributable to Iceland's comprehensive prevention approach, launched in the late 1990s, followed by the Tobacco Control Act in 2002. Additional policies on alcohol prevention have been introduced in recent years, including a Policy on Public Health in 2021. At the national level, Iceland taxes alcohol and tobacco, with the largest alcohol tax of any country in the EU (OECD, 2020). Access to alcohol is controlled through a state-owned monopoly chain of liquor stores, which are the only retail sites allowed to sell alcoholic beverages containing more than 4.75 % alcohol by volume. Activities to promote healthy lifestyles have been introduced by the Directorate of Health and the Primary Health Care, and the Icelandic Cancer Society organises health promotion activities and has developed education materials on cancer prevention – including smoking cessation – which are available on its website.

Human papillomavirus vaccination rates are high in Iceland

In Iceland, HPV vaccination has been provided to girls aged 12 years at school free of charge since 2011. Older girls can receive the vaccine with a prescription, but they need to pay the cost in full. Uptake has been high since the start of the vaccination programme; in 2020, 88 % of girls aged 15 years had received HPV vaccination.

Exposure to air pollution is lower in Iceland than in the EU

In 2019, exposure to PM₁₀¹ in Iceland was 10.6 µg/m³, on par with the lowest in the EU and almost half the EU average (20.5 µg/m³). Iceland also had very low concentrations of PM_{2.5} compared to other EU countries (5.9 µg/m³ vs. 12.6 µg/m³ EU average). According to the Institute for Health Metrics and Evaluation, ozone and PM_{2.5} exposure accounted for an estimated 1 % of all deaths in Iceland in 2019, a rate lower than across the EU.

4. Early detection

Iceland has a long history of implementing cervical and breast cancer screening programmes

Iceland introduced a nationwide population-based cervical cancer screening programme (screening offered to a specific at-risk target population) in 1964. Based on analyses of the effectiveness of the programme, the frequency and target population have been changed several times (Sigurgeirsdóttir et al, 2014). From January 2021, women aged 23-29 years are invited to have a smear test every three years, and women aged 30-59 years are invited to have an HPV test every five years. Women aged 60-64 years are invited to have an HPV test; if the result is negative, they are discharged from the screening programme. Women in all the target age groups need to pay a low co-payment for cervical cancer screening.

Iceland rolled out a nationwide population-based breast cancer screening programme in 1988. Mammography is provided every two years for women aged 40-69 years and every three years for women aged 70-74. Unlike in most European

countries, women in the target age groups need to pay a low co-payment for breast cancer screening, although it is set lower for target age groups than others. Women with mutations in the tumour-suppressor (BRCA1 and BRCA2) genes are at increased risk of developing breast cancer; these women undergo targeted screening, including further examination and closer supervision at Landspítali University Hospital.

Following advice from the Screening Advisory Group and the Directorate of Health in 2019, the Minister of Health transferred screening services from the Icelandic Cancer Society to the public sector, thereby changing the provider, location and implementation of screening services, and bringing them closer to the cancer screening programme structure and quality standards recommended by the European screening guidelines. Cervical cancer screening is now provided by midwives and primary care physicians at primary health care centres, and by gynecologists at their clinics, and breast cancer screening is provided at Landspítali University Hospital and Akureyri Hospital. The Coordination Centre for Cancer Screening within

¹ Particulate matter (PM) is classified according to size: PM₁₀ refers to particles less than 10 micrometres in diameter; PM_{2.5} to particles less than 2.5 micrometres in diameter.

the Public Primary Care Service is responsible for coordinating access to cancer screening, and the Directorate of Health is responsible for the cancer screening registry, which collects screening uptake data and clinical results to compute quality indicators.

Iceland maintains high uptake of cervical cancer screening

Among women aged 15 years and over in Iceland, 66 % reported having cervical cancer screening in the past three years in 2019 – which is 6 percentage points higher than the EU average – contributing to the relatively low incidence rate of cervical cancer. Alongside the high HPV vaccination rate (Section 3), incidence rate of cervical cancer is expected to continue to decrease.

Across all population subgroups, cervical cancer screening uptake in Iceland was higher than the EU average. However, the rate was lower among those with lower (51 %) than higher (81 %) education levels and among those on lower (56 %) than higher (85 %) incomes (Figure 6). The gap by income is larger in Iceland than in many other EU countries, suggesting that financial barriers to accessing paid cervical cancer screening may exist.

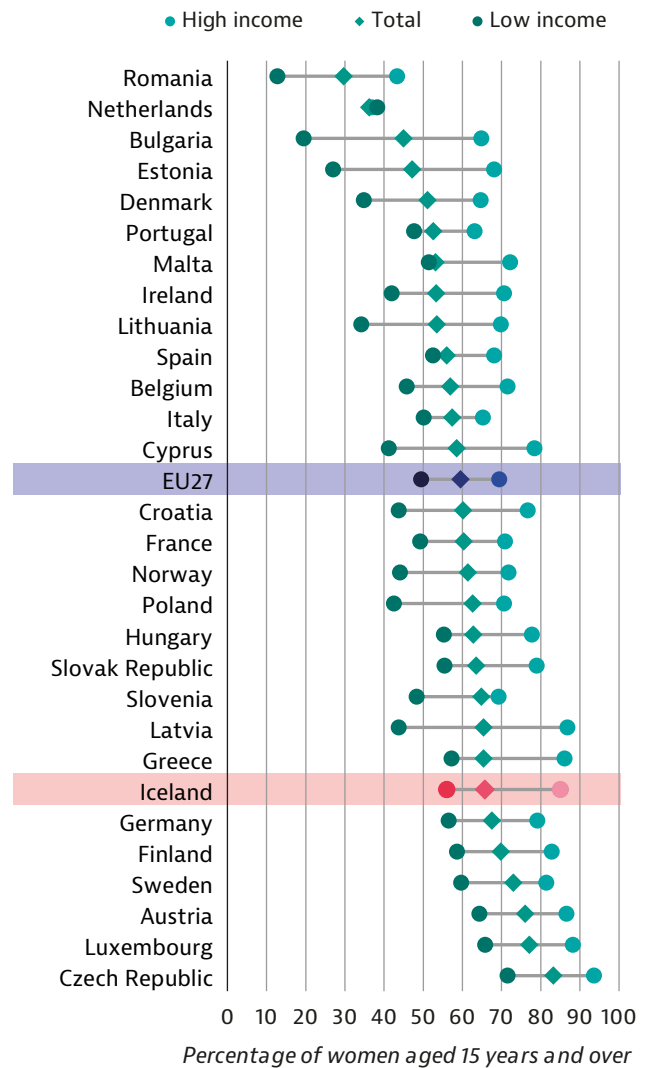
Breast cancer screening uptake is high, but the income gap is large

In 2019, 71 % of women aged 50 to 69 years reported having a mammogram in the previous two years – almost 6 percentage points higher than the EU average – although the rate of mammograms per population was lower than the EU average (OECD, 2022). The breast cancer screening rate was higher than the EU averages for low and high income, and for low and high education subgroups. Icelandic women living in cities, towns and suburbs were the exception: the rate among urban women was below the EU average. Within Iceland, the rate was significantly lower among those on lower (63 %) than higher (85 %) incomes. This leads to a difference of over 21 percentage points, compared to the EU average difference of 15 percentage points (Figure 7), suggesting that paid breast cancer screening may hinder access among those on lower incomes.

Efforts are being made to increase cancer screening uptake

In 2019 and 2020, the Icelandic Cancer Society offered a free first screening for cervical and breast cancer, resulting in a large increase in uptake of breast cancer screening. The Directorate of Health provided comprehensive information on cervical and breast cancer screening on its

Figure 6. Differences in cervical cancer screening rate by income level are large in Iceland

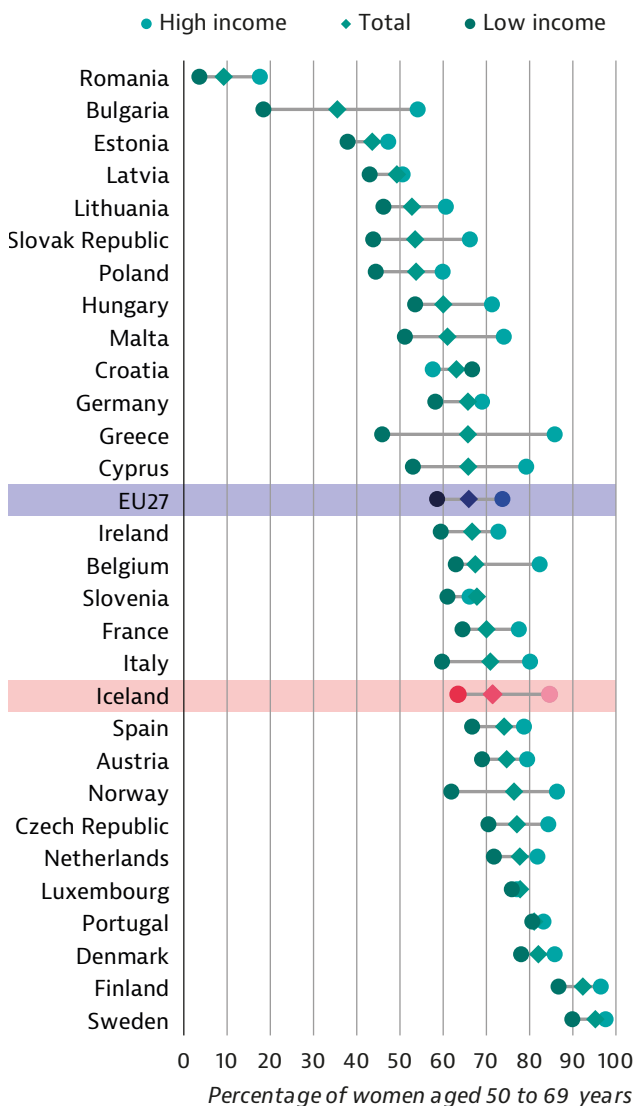


Note: The EU average is weighted (calculated by Eurostat). The figure reports the percentage of women aged 15 years and over who reported having a cervical smear test in the past three years.

Source: Eurostat Database (EHIS). Data refer to 2019.

website, and information leaflets have been created and published in Icelandic, English and Polish. The Icelandic Cancer Society and the the Coordination Centre for Cancer Screening also organised activities to build awareness around cancer prevention and care through Pink October and March for Men. In addition, the Coordination Centre for Cancer Screening and health authorities increased information dissemination about the importance of cancer screening. To increase uptake, the method of inviting women to attend cancer screening is being reviewed: taking account of the low uptake among women with low socioeconomic backgrounds, discussions are under way to develop more targeted approaches to encourage these subgroups to attend screening.

Figure 7. Differences in breast cancer screening rates by income level are large



Note: The EU average is weighted (calculated by Eurostat). The figure reports the percentage of women aged 50 to 69 years who reported receiving a mammogram in the past two years. Source: Eurostat Database (EHIS). Data refer to 2019

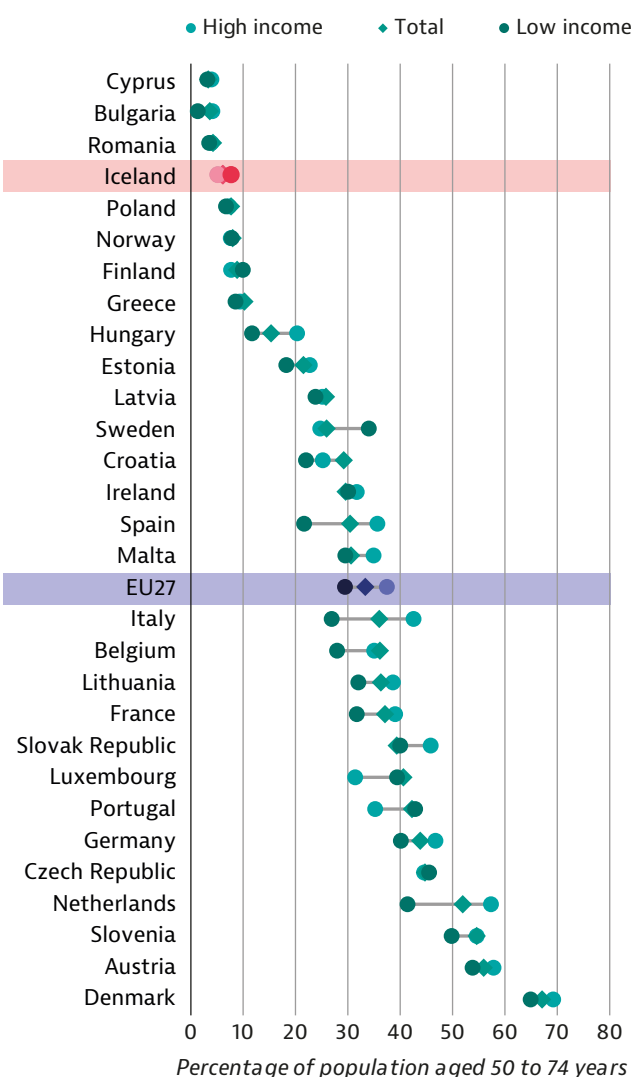
The colorectal cancer screening rate is very low, and a new screening programme is planned

Colorectal cancer screening is not organised as a population-based programme in Iceland, and in 2019 the proportion of adults aged 50 to 74 years who reported having colorectal cancer screening in the past two years was very low (6 %) – more than five times lower the EU average of 33 % (Figure 8). Unlike cervical and breast cancer, higher colorectal cancer screening uptake was reported among those with lower (9 %) than higher (5 %) education levels and among those on lower (8 %) than higher (5 %) incomes. In recent years, an increasing number of health insurance funds and employers have fully funded people to have an opportunistic colonoscopy (Ministry of Welfare, 2016), suggesting

that coverage of colorectal cancer screening is probably higher than the rates shown in Figure 8.

Creation of a plan to introduce a colorectal cancer screening programme is ongoing. As a first step, it is planned that people aged 60-69 years will be invited to have a faecal immunochemical test every two years, and people aged 50 years (or over) will be invited to a colonoscopy. Based on assessment of this pilot, the plan is to increase the target population to those aged 50-74 years to align with the European Commission’s recommendations. No plans are in place to introduce other cancer screening in Iceland.

Figure 8. Colorectal cancer screening rate is lower in Iceland than in most EU countries



Note: The EU average is weighted (calculated by Eurostat). The figure reports the percentage of population aged 50 to 74 years who reported having a faecal occult blood test in the past two years. Source: Eurostat (EHIS).

5. Cancer care performance

5.1 Accessibility

Financial barriers to accessing some cancer care may exist among groups on lower incomes

Patients need to pay for consultation and diagnostic examinations, but they receive a rebate of medical care costs beyond EUR 193 per calendar year. The elderly, disabled and children get a rebate of medical cost beyond EUR 128. The threshold is not applied to costs of medicine, but inpatient care – including surgery and drugs administered in hospitals – are provided free of charge (OECD, 2013).

Access to cancer care has improved via decentralised chemotherapy, follow-up and palliative care

Until 1998, cancer care was centralised at Landspítali University Hospital in Reykjavík. However, to improve access to cancer care across regions, delivery has been decentralised. While the majority of cancer care – including most surgeries and all radiation therapy – is still provided at Landspítali University Hospital, two regional hospitals (including Akureyri Hospital) also provide cancer care – mostly intravenous and oral treatment and minor procedures. Akureyri hospital also provides chemotherapy on an inpatient basis from 1998 and on an outpatient basis from 2007. In addition, primary care is playing an increasing role in providing follow-up cancer care in the community, while regional hospitals also continue to provide follow-up care. For rare cancers including childhood cancer, Iceland ensures access through international collaboration (see Box 1).

Box 1. Access to care for rare cancers is assured through international collaboration

Iceland provides care for most common cancers, but for rare cancers (including childhood cancers) for which specific treatment is not available, the country actively collaborates with university hospitals in Scandinavian countries – particularly in Sweden. To ensure access to care for rare cancers abroad, funding is available to cover travel and health care costs.

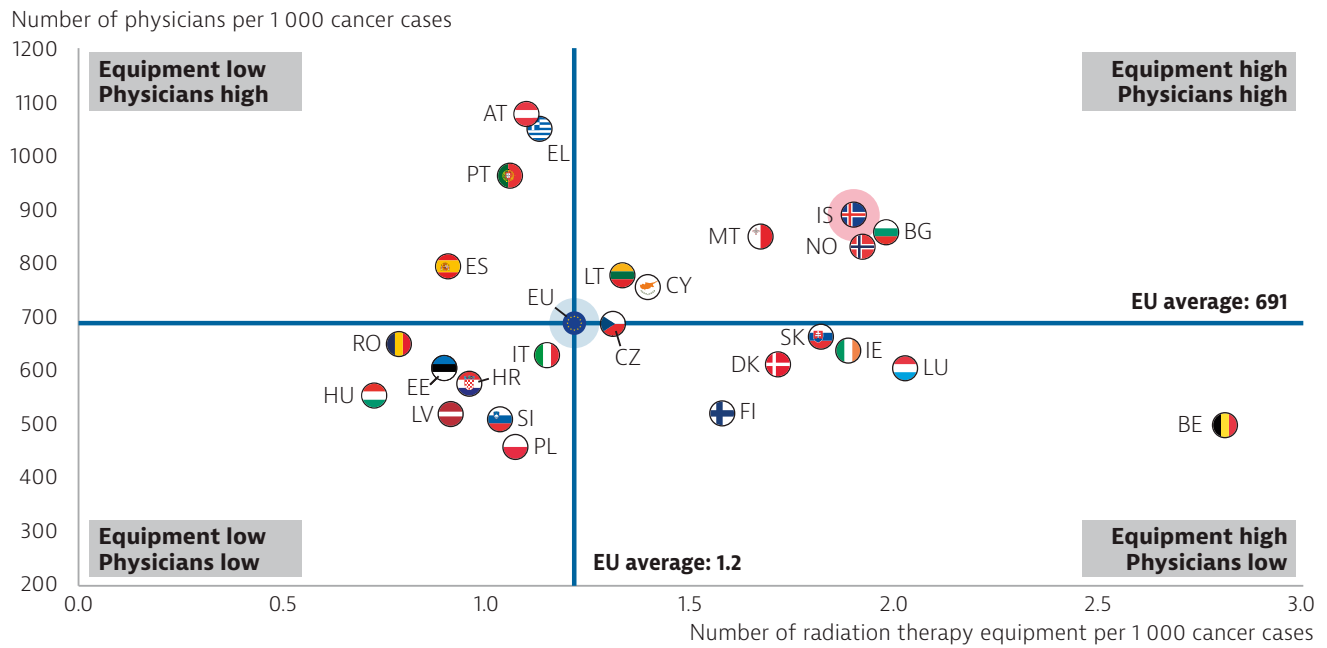
Access to palliative care has also improved over recent decades: the Icelandic Cancer Society started the first palliative home care team in Reykjavík in 1987, and availability has expanded since then. Palliative care is now available at Landspítali University Hospital and Akureyri Hospital, and a palliative home care team is also available in Reykjavík and Akureyri. Access to palliative care is therefore better in the capital region, but another regional hospital that provides cancer care in the south of the country will also start providing palliative home care. As most palliative care in the community is provided by non-specialists, Landspítali University Hospital's palliative care centre started to provide support for training and implementation of clinical guidelines to strengthen access to high-quality palliative care throughout the country.

Resources for cancer care are sufficient, although challenges in workforce numbers are persistent

Availability of medical equipment seems generally adequate in Iceland. In 2020, the rate was 0.8 radiation therapy equipment per 100 000 population – the same as the EU average. However, given the relatively low number of cancer cases, the density is 1.9 radiation therapy equipment per 1 000 cancer cases, which is higher than the EU average of 1.2 (Figure 9). Availability of other equipment was also high: the number of magnetic resonance imaging (MRI) scanners per 100 000 population was 1.9 – slightly above the EU average. Over recent decades, the number of computed tomography (CT) scanners has increased significantly, reaching 4.7 scanners per 100 000 population in 2020, which is almost twice the EU average.

Iceland also uses high-quality, relatively new medical equipment. In 2018, two MV therapy and one brachytherapy equipment were available and they were all less than 10 years old.

Figure 9. The volume of resources in cancer care is above the EU average



Note: The EU average is unweighted (calculated by the OECD). Radiation therapy equipment from hospitals and providers of ambulatory care. Data refer to medical doctors (excluding nursing and caring professionals).

Source: Eurostat and OECD Health Database (data refer to 2020, or nearest year).

While the number of oncologists fell over the last decade, it was 4.8 per 100 000 population in 2015 and higher than in the EU, although this was lower than in Italy (7.1) and Sweden (5.7), where cancer incidence and mortality rates are comparable. For the number of cancer cases, the number of physicians was also high (890 per 1 000 cancer cases) compared to the EU average of 691 per 1 000 (Figure 9). Since Icelandic-born doctors train for oncology specialisation abroad, and many work abroad, efforts have been made recently to recruit these doctors to the national health system. Iceland has also tried to increase the number of foreign-born doctors. Although the proportion is still very small, their number has increased in radiation oncology. However, the shortage of nurses is worsening, and recruitment of foreign nurses is challenging because of the language barrier.

Owing to the country’s size, a small change in numbers of health workforce can have a large impact on cancer care delivery, so securing health care professionals is a continuous challenge. Education and human resources development in cancer care were therefore identified as among the nine priorities of the National Cancer Plan. To improve recruitment and retention of health professionals in cancer care, a comprehensive overview of staffing and education is planned to address issues in medical education, graduate education for nurses, specialised education, continuous professional education and work environments.

Maximum waiting times are set and monitored, but ensuring timely access to care remains difficult

Waiting times for several procedures are monitored at the provider level. Health care providers report the number of people on waiting lists and the percentage of people waiting more than 3, 6, 9 and 12 months for specific procedures – including partial excision of mammary gland and mastectomy – to the Directorate of Health, which assesses and reports waiting times by provider regularly on its website. This promotes improved access to high-quality cancer care across providers.

The maximum waiting time target between a decision to treat and first cancer treatment is 31 days, and the target between referral with a highly suspected case of cancer and first cancer treatment is 62 days (OECD, 2020). The majority of patients receive needed procedures within these targets. In 2019, for example, 129 patients received partial excision of mammary gland, and in October 2019, 18 patients were on the waiting list and 17 % of them waited more than 3 months. For mastectomy, 147 patients received the procedure in 2019, but 54 patients were on the waiting list in October 2019 and 46 % of them waited more than 3 months, pointing to some difficulties in ensuring timely access to cancer procedures (Directorate of Health, 2022).

5.2 Quality

High-quality cancer care, meeting international standards, is provided by skilled professionals

High-quality cancer care is ensured through use of international guidelines and tumour board meetings. Due to limited national capacity, professionals in Iceland use international clinical guidelines, including those developed by the National Institute for Health and Care Excellence (United Kingdom), the National Comprehensive Cancer Network (United States) and specialist associations in Nordic or other European countries.

Multidisciplinary tumour board meetings are held regularly to discuss patient cases and ensure that the treatment given complies with international guidelines. Tumour boards are used as a case management programme to provide timely, high-quality, evidence-based, seamless cancer care according to international guidelines. International collaboration with cancer centres abroad is also actively sought at the institutional and professional levels to improve the quality of cancer care.

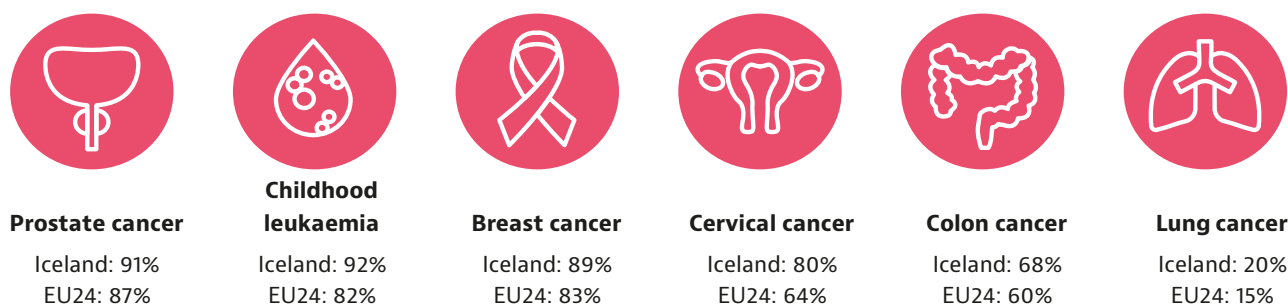
High-quality cancer care is also maintained by a well-trained workforce. The majority of oncologists in Iceland have specialist licences in oncology. Professionals are updated on the latest cancer care, as many complete specialised training abroad and they interact and collaborate actively because of their low numbers. Numbers of nurse

specialists who have completed a Master's degree are increasing and, although limited, specialised training in oncology is available. Landspítali University Hospital also supports other hospitals by providing training for professionals – including nurses – on specific care such as palliative care to ensure a high quality of cancer care across providers (see Section 5.1).

Cancer survival rates are higher than in other EU countries

Five-year net cancer survival rates, a marker of care quality, are higher in Iceland than the EU averages (Figure 10). According to 2010-2014 data, net survival rates for cervical and lung cancers are comparable to the best performing EU countries, and net survival rates for breast, colon and lung cancer and childhood leukaemia are also high. The share of breast cancer patients diagnosed at an early or localised stage was above the EU average, and their five-year net survival was 98.7 %, which is comparable to the best performing EU countries for 2005-2009. In contrast, however, five-year net survival for advanced-stage breast cancer was comparable to the worst performing EU countries for 2005-2009. More recent internationally comparable data are not available to assess cancer care outcomes across breast cancer stages, suggesting a need to improve timely availability of cancer statistics to help identify areas for improvement and further action.

Figure 10. Cancer survival rates are higher than most EU countries



Note: Data refer to people diagnosed between 2010 and 2014. Childhood leukaemia refers to acute lymphoblastic cancer. Source: CONCORD Programme, London School of Hygiene and Tropical Medicine.

Iceland is strengthening its information infrastructure to further improve cancer care quality

The Icelandic Cancer Society and the Directorate of Health have run the Icelandic Cancer Registry, a population-based data bank on cancer, since 1955. This covers almost all cancer patients in the country, including those with rare cancers, and collects several indicators – such as diagnosis, stage at diagnosis, treatment procedures and

medications – from pathology and haematology laboratories, medical departments, general practice, individual physicians and private clinics. To improve access to and quality of cancer care through regular monitoring and assessment, the Icelandic Cancer Society developed for the past ten years a quality registry, which includes more detailed information such as cancer stage and waiting time for some cancer types, and plans to expand the registry for other cancer types.

To identify and reduce variations in cancer care quality and outcomes, linked data could be used further. The Icelandic Cancer Registry data are linked with the cancer screening registry data using unique patient identifiers and linked data could be used to allow to assess, for example, the impact of screening on cancer care outcomes. Socioeconomic data available at Statistics Iceland could also be linked with Icelandic Cancer Registry data to monitor differences in cancer care outcomes by socioeconomic background. Since such linking requires permission from the Scientific Ethics Committee, more regular data linkages could be explored to monitor and assess cancer care delivery at a more granular level.

Iceland is exploring the use of patient voices to deliver more people-centred cancer care

So far, patients have not been involved systematically in improving cancer care quality in Iceland. Patient representatives are not involved in market authorisation and coverage decision-making processes for new cancer drugs, although their representation is becoming common in other countries in Europe (Auraaen et al., 2016). While a mechanism for patients to raise

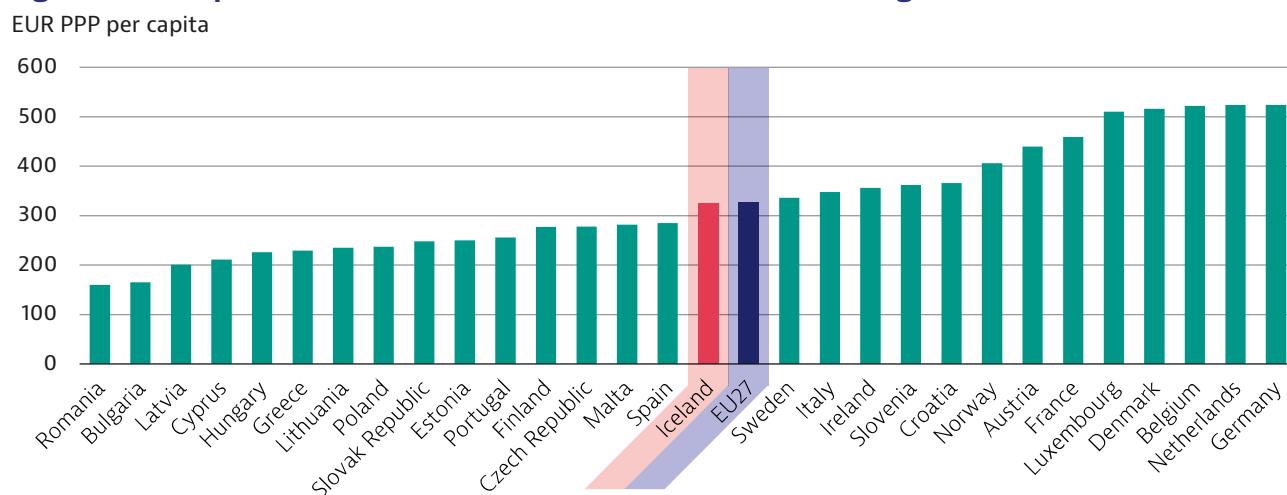
concerns and complaints exists, patient-reported measures that could inform quality of cancer care and quality of life of cancer patients have not been collected systematically and used for quality improvement and decision making. However, the Icelandic Cancer Society recently started collecting patient-reported experience measures to provide feedback to providers. Regular collection of patient-reported outcome measures is also being considered.

5.3 Costs and value for money

Cost of cancer care in Iceland is about the EU average

In 2018, the cost of cancer in Iceland, adjusted for purchasing power parity (PPP), was EUR 324 per capita – similar to the EU average of EUR 326 per capita (Figure 11). Drugs accounted for about 30 % of the direct cost of cancer care – a proportion similar to the EU average. Among indirect costs, productivity loss from morbidity was lower than in the EU, suggesting that rehabilitation and follow-up care facilitate return to work for cancer patients.

Figure 11. Per capita cancer care cost in Iceland is about the EU average



Note: The EU27 average is unweighted (calculated by the OECD).
Source: Hofmarcher et al. (2020).

Fixed budget caps on drug spending have increased but cost reducing measures also need to be explored

Owing to the increasing costs of cancer drugs, ensuring access to new innovative cancer drugs is a challenge. An annual budget is available to cover the cost of these medicines. The budget for newly licensed drugs was ISK 500 million (EUR 3.5 million) in 2022, which is significantly higher than the ISK 100 million in 2021 (equivalent to 0.03 % of health spending in 2021).

However, the budget cannot cover all new cancer drugs, as their costs – particularly for chemotherapy treatment – are increasing. The price of drugs tends to be high for small countries as the market size is small, and the price of some cancer drugs seems much higher in Iceland than in other Nordic countries. This suggests a need to explore the possibility of joint purchases of new and expensive cancer drugs with other Nordic countries to reduce costs and increase access in Iceland (Ministry of Welfare, 2016).

5.4 COVID-19 and cancer: building resilience

The impact of the pandemic on cancer prevention, screening programmes and diagnosis was limited

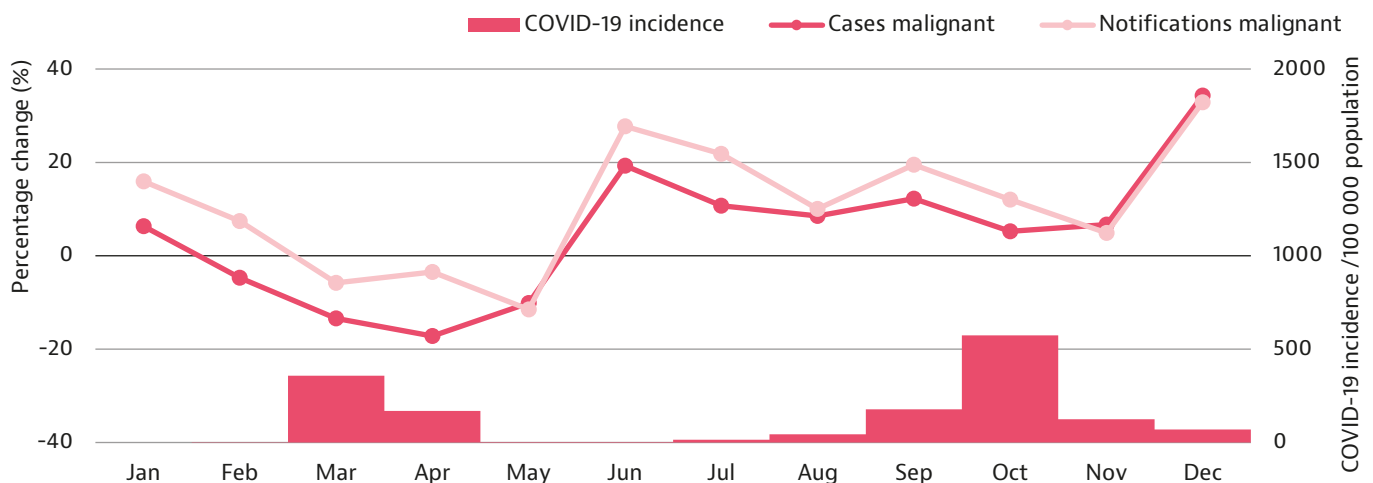
Partly because Iceland had relatively low numbers of COVID-19 infections compared to other European countries in 2020, the negative impact on cancer prevention and screening was limited (Fujisawa, 2022). The HPV vaccination rate was stable between 2019 and 2020. Although cancer screening stopped temporarily in some regions between March and May 2020, according to screening programme data the proportion of women aged 23-65 years who had been screened for cervical cancer within the past three and a half years was 66 % in 2020, close to 67 % in 2019 and the same level as in 2017 and 2018. The proportion of women aged 40-69 years who had been screened for breast cancer within the

past two years in 2020 (62 %) was higher than the average rate for 2017-2019 (58 %).

In 2020 as a whole, the COVID-19 pandemic did not affect cancer diagnostic activity and incidence rates in Iceland. The volume of cancer diagnoses notified to the Icelandic Cancer Registry and the number of new cancer cases decreased between March and May 2020 during the first wave of the pandemic, compared to the average numbers in the same months in 2017-2019. But they increased substantially in June, and numbers continued to be higher than in previous years during the second wave of the pandemic. Overall, the total number of diagnostic services increased by 10.3 %, and new cancer cases by 4.2 % in 2020, compared to the averages in 2017-2019 (Figure 12).

Among six countries studied (Denmark, Faroe Islands, Finland, Iceland, Norway and Sweden), the increase in numbers of new cancer cases and diagnostic activity in 2020 was largest in Iceland (Johansson et al., 2022).

Figure 12. Total numbers of new cancer cases and diagnostic activity increased in Iceland in 2020



Source: Johansson et al (2022).

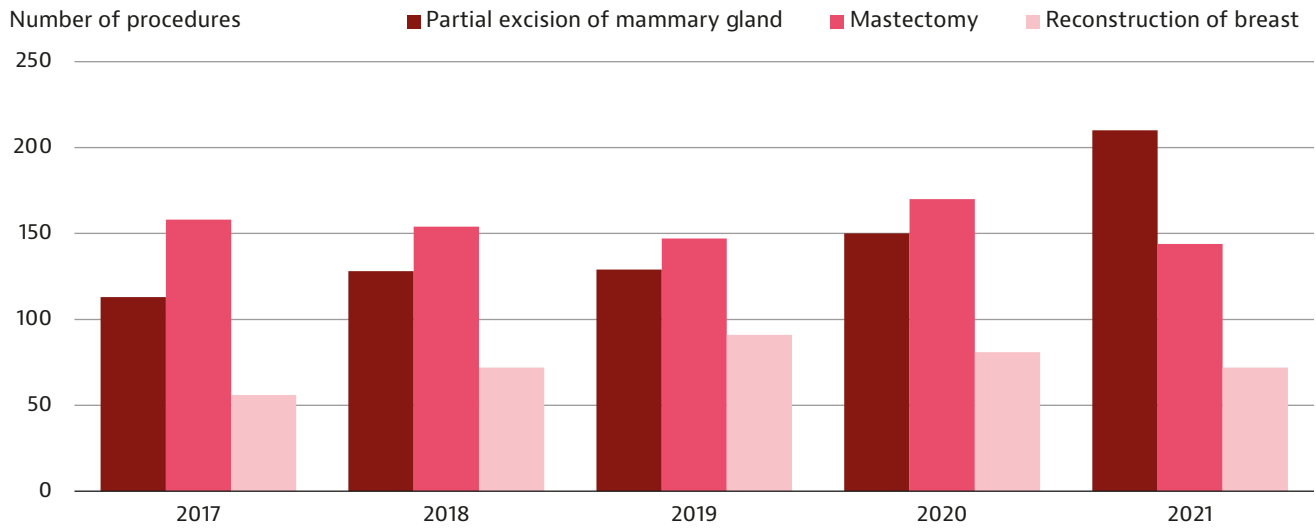
Outpatient onsite cancer care visits decreased significantly, but inpatient care volumes increased

At the Landspítali University Hospital cancer centre, outpatient visits decreased by 23.7 % and day visits by 7.1 % between 2019 and 2020. This may be due to patient hesitancy to seek in-person cancer care during the pandemic to avoid COVID-19 infection and accelerated availability of telemedicine for cancer patients. According to Landspítali official data, teleconsultations increased from 11 490 in 2019 to 17 258 in 2020. Conversely, hospital admissions increased by 0.3 %, patient days increased by 2.3 % and average length of stay increased by 6.3 % in 2020 compared to 2019 (Landspítali University Hospital, 2020).

The volume of inpatient cancer care did not decrease, but waiting times increased in mid-2020

Unlike in many other European countries, in Iceland the volume of breast cancer surgery was stable during the pandemic. While the number of breast reconstructions decreased by 10 % in 2020 and 2021, the number of partial mammary gland excisions increased by 16 % in 2020 and 40 % in 2021, compared to the previous year. The number of mastectomies increased by 16 % in 2020 but decreased by 15 % in 2021 to a similar level to that in 2019 (Figure 13).

Figure 13. The number of breast cancer surgeries did not decrease during the pandemic

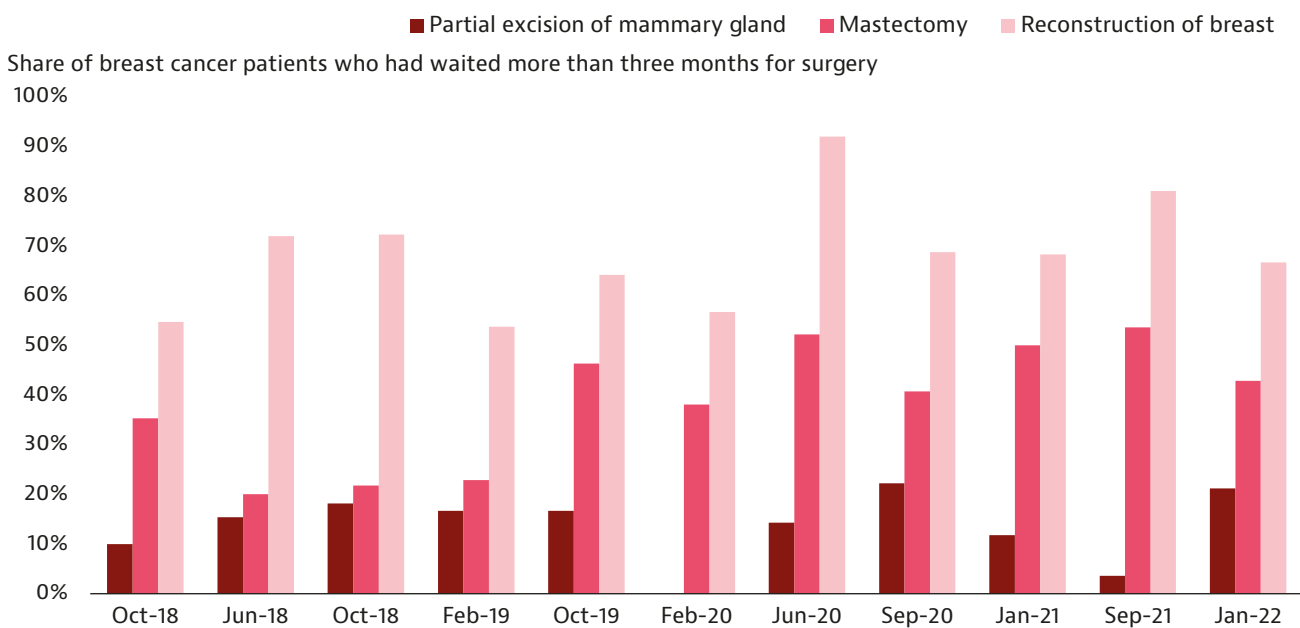


Source: Directorate of Health (2022).

However, waiting times were prolonged around mid-2020, and the share of breast cancer patients who had waited more than three months for different types of breast cancer surgery increased in the second or third quarter of 2020 (Figure 14). While the large majority of patients had surgery without delay, in June 2020, over nine out of ten breast cancer patients on the waiting list waited more than three months for breast reconstruction. The share of patients with long waiting times was lower during the second wave of the pandemic, but

it remained high. Similar trends were also observed for patients waiting for mastectomy and partial excision of mammary gland, although the share of those with long waiting times for these surgeries was lower than the share of those with long waiting times for breast reconstruction (Directorate of Health, 2022). These figures illustrate a difficulty in providing timely delivery of cancer surgery while managing increased demand to care for patients with severe symptoms of COVID-19 and backlogs of different types of surgery during the pandemic.

Figure 14. The number of breast cancer patients waiting more than three months peaked in mid-2020



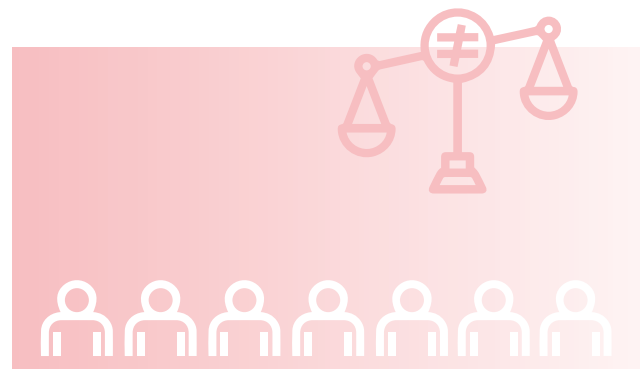
Source: Directorate of Health (2022).

6. Spotlight on inequalities

In Iceland, financial barriers to accessing cancer care may exist among those on low incomes, as breast and cervical cancer screening are not free of charge, drugs prescribed in outpatient care need to be paid for, and cancer treatment such as surgery and radiation therapy is provided at few hospitals, requiring transportation costs. While gender differences are small for some indicators, there are marked inequalities in cancer prevention and access to screening.

- The gender difference in cancer incidence rates is very small in Iceland. The cancer mortality rate among men was more than 15 % lower than the EU average, and the rate for women was 9 % higher than the EU average, resulting in a very small gender gap.
- However, certain risks of developing cancers are higher among men, possibly increasing gender gaps in cancer burden in the future. Overweight and obesity were 30 % more prevalent among men than women, and daily vegetable consumption was less common among men than women.
- People with lower education level also have higher risks of developing cancers. Overweight and obesity rates were higher among people with lower (66 %) than higher (57 %) education levels. In addition, smoking prevalence was more than twice as high among people with lower than higher education levels. These suggest that targeted approaches may be needed to promote healthier lifestyles among people with lower socioeconomic background.
- Cervical cancer screening rate was 30 percentage points lower among women with lower than higher education levels, and 29 percentage points lower among women with lower than higher incomes. Similar patterns were observed for breast cancer screening rates, with a difference of over 21 percentage points between participation rates among higher incomes women than lower incomes women.

Several policies have been implemented to improve access to high-quality cancer care and reduce disparities, including an increased budget for cancer drugs and improved access across regions through decentralised delivery of chemotherapy, follow-up and palliative care. International collaboration with Nordic countries allows access to care particularly among patients with rare cancers, including childhood cancer. As linking Icelandic Cancer Registry and socioeconomic data requires permission from the Scientific Ethics Committee, Iceland could explore possibilities of undertaking more regular data linkages to monitor and address inequalities in cancer care across population groups.



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Country abbreviations

Austria	AT	Denmark	DK	Hungary	HU	Luxembourg	LU	Romania	RO
Belgium	BE	Estonia	EE	Iceland	IS	Malta	MT	Slovak Republic	SK
Bulgaria	BG	Finland	FI	Ireland	IE	Netherlands	NL	Slovenia	SI
Croatia	HR	France	FR	Italy	IT	Norway	NO	Spain	ES
Cyprus	CY	Germany	DE	Latvia	LV	Poland	PL	Sweden	SE
Czech Republic	CZ	Greece	EL	Lithuania	LT	Portugal	PT		

European Cancer Inequalities Registry

Country Cancer Profile 2023

The European Cancer Inequalities Registry is a flagship initiative of the Europe's Beating Cancer Plan. It provides sound and reliable data on cancer prevention and care to identify trends, disparities and inequalities between Member States and regions. The Registry contains a website and data tool developed by the Joint Research Centre of the European Commission (<https://cancer-inequalities.jrc.ec.europa.eu/>), as well as an alternating series of biennial Country Cancer Profiles and an overarching Report on Cancer Inequalities in Europe.

The Country Cancer Profiles identify strengths, challenges and specific areas of action for each of the 27 EU Member States, Iceland and Norway, to guide investment and interventions at the EU, national and regional levels under the Europe's Beating Cancer Plan. The European Cancer Inequalities Registry also supports Flagship 1 of the Zero Pollution Action Plan.

The Profiles are the work of the OECD in co-operation with the European Commission. The team is grateful for the valuable comments and suggestions provided by national experts, the OECD Health Committee and the EU Expert Thematic Group on Cancer Inequality Registry.

Each Country Cancer Profile provides a short synthesis of:

- the national cancer burden
- risk factors for cancer, focusing on behavioural and environment risk factors
- early detection programmes
- cancer care performance, focusing on accessibility, care quality, costs and the impact of COVID-19 on cancer care.

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